STEREO DOUBLE CASSETTE TAPE DECK

KX-94W

KENWOOD

INSTRUCTION MANUAL

For your records

Record the serial number, found on the back of the unit, in the spaces designated on the warranty card, and in the space provided below. Refer to the model and serial numbers whenever you call upon your dealer for information or service on this product.

Model _____ Serial Number _____

Unpacking

Unpack the unit carefully and make sure that all accessories and cables are put aside so they will not be lost.

Examine the unit for any possibility of shipping damage. If your unit is damaged or fails to operate, notify your dealer immediately. If your unit was shipped to you directly, notify the shipping company without delay. Only the consignee (the person or company receiving the unit) can file a claim against the carrier for shipping damage.

We recommend that you retain the original carton and packing materials for use should you transport or ship the unit in the future.

Before applying power

IMPORTANT!

U.S.A., Canada, Australia U.K., and Europe

Units shipped to the U.S.A. and Canada are designed for operation on 120 volts AC only. Units shipped to Australia and the U.K. are designed for operation on 240 volts AC only. Units shipped to Europe are designed for operation on 220 volts AC only. These units are not equipped with an AC voltage selector switch and the discussion of such a switch that follows should be disregarded.

All other countries

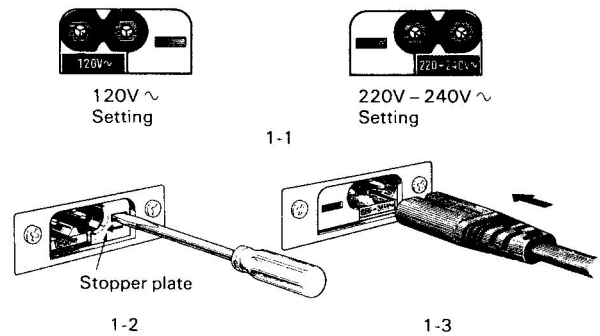
Units shipped to countries other than the above countries are equipped with an AC voltage selector switch on the rear panel. Refer to the following paragraph for the proper setting of this switch.

AC voltage selection

This unit operates on 120 volts or 220 – 240 volts AC. The AC voltage selector switch on the rear panel is set to the voltage that prevails in the area to which the unit is shipped. Before connecting the power cord to your AC outlet, make sure that the setting position of this switch matches your line voltage. If not, it must be set to your voltage in accordance with the following direction.

Note:

Our warranty does not cover damage caused by excessive line voltage due to improper setting of the AC voltage selector switch.



120V ∿ Setting (1-1) 220V – 240V ∿ Setting

1-2 1-3

Fig. 1

1. Before plugging in this unit, make sure that the position of the AC voltage selector conforms to your line (mains) voltage. If not, it must be reset. See Figure 1-1.
2. To reset the selector, slide the stopper plate to the opposite side with a screwdriver or other pointed tool. See Figure 1-2.
3. Insert the power cord securely. See Figure 1-3.

For United Kingdom

The mains plug must be removed from the wall socket prior to any internal examination.

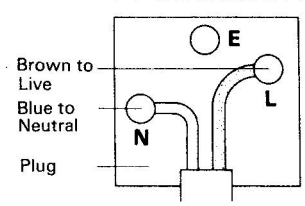
Important

The wires in this mains lead are coloured in accordance with the following code:

Blue..... Neutral
Brown ..... Live

The wires in this mains lead must be connected to the terminals in the plug as follows:

Wire Colour	Plug Terminal Marking
Blue.....	N or Black
Brown	L or Red



Notes:

1) If a 13-amp plug is used, this must be fitted with a 5-amp fuse.
2) If a 3-pin plug with earthing contact is used, no wire must be connected to the E terminal.

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Controls, indicators and connectors

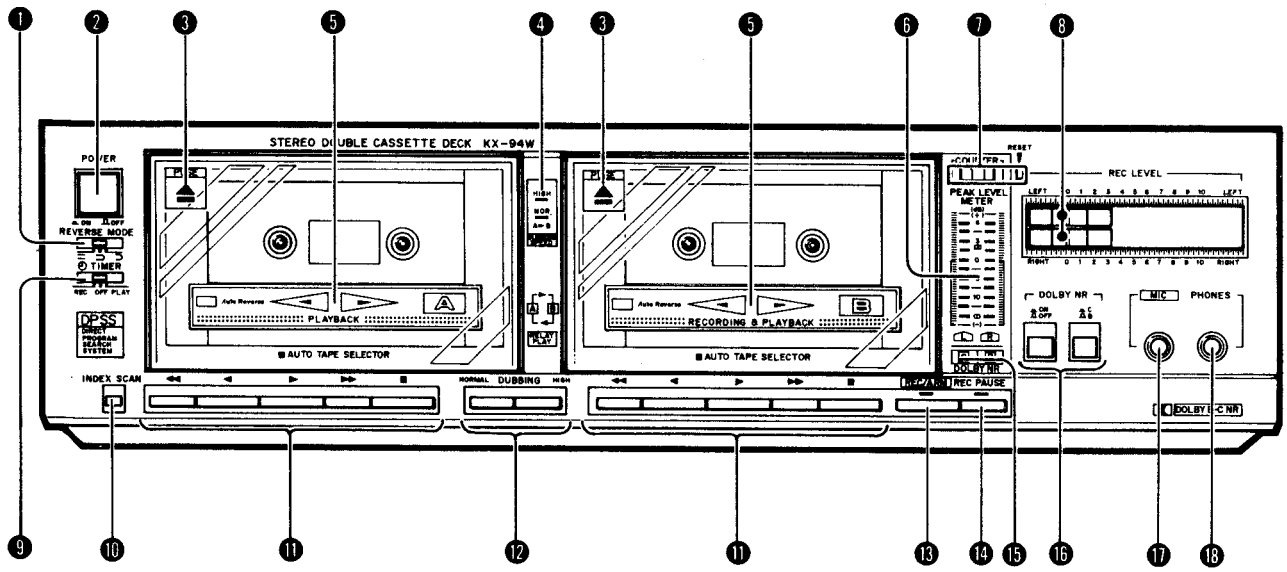

Fig. 3

❶ REVERSE MODE switch

Normal mode (⇄) – In this position, one side playback or recording is possible. When the end of tape is reached, the operation mode is released and the tape stops.

Reverse mode (⇄) – In this position, both sides can be played back or recorded. In this mode, recording and playback do not automatically change from side B to side A.

When the tape reaches its end in playback mode, the tape loaded on the other deck is played back.

DPSS and index scan are carried out on both sides, however, the operation automatically changes from side B to side A.

Endless mode (↻) – In this position, tape is played back repeatedly. DPSS and index scan are carried out on both sides, however, the operation automatically changes from side B to side A.

❷ POWER switch

Use this switch to turn the power on and off.

❸ Eject section (⏏)

Press this section to open the cassette compartment.
Press the cassette compartment lid to close it.

❹ DUBBING SPEED indicators

❺ Reverse/forward indicators

Show the direction of tape travel.

❻ PEAK LEVEL METERs

Indicate the peak values of the input levels for recording or the output levels for playback.

WARNING:
TO PREVENT FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

Safety precautions

CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN	**CAUTION:** TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.
	The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure; that may be of sufficient magnitude to constitute a risk of electric shock to persons.
	The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

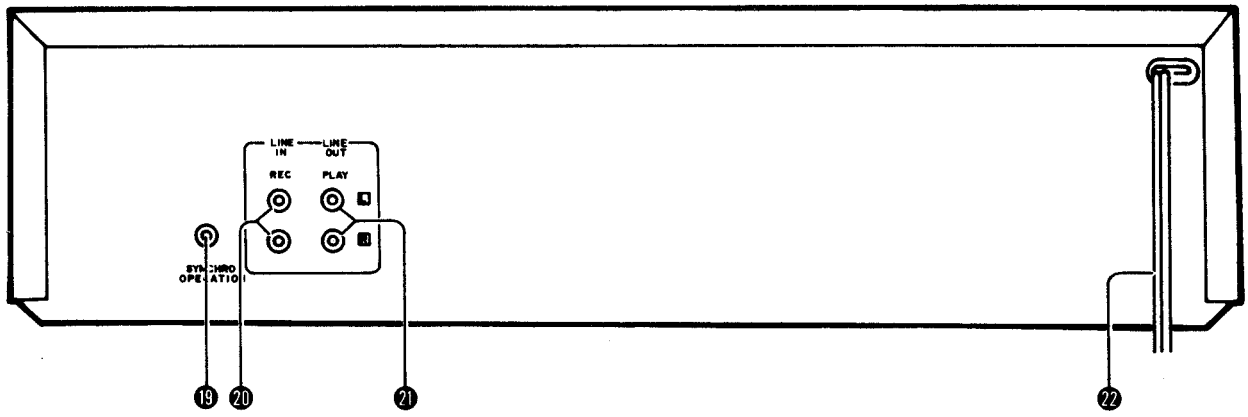

Fig. 4

⑦ Tape COUNTER and RESET button
The tape COUNTER provides a means of locating passages on the tape. When starting a recording, set the counter 000 by pressing the RESET button.

⑧ REC LEVEL controls
During recording adjust input level while observing the PEAK LEVEL METERs.

⑨ TIMER stand-by switch
This switch works for B deck only and is used along with an audio timer when an unattended recording or timer-playback is performed. Set this switch to the REC position for unattended recording, to the PLAY position for timer-playback and to the OFF position when the timer is not used. For timer operation, B deck has the priority.

⑩ INDEX SCAN button
This button is for A deck only.
Press this button to select the desired tune. When this button is pressed, the tape is rapidly advanced while the beginning of each tune is played back for about 10 seconds. When the desired tune is reached, press the forward play button (▶) or reverse play button (◀).

⑪ Operation buttons
- **Stop button (■)**

Press to stop tape travel. This will also release the previous mode of operation.
- **Fast reverse button (◀◀)**

Press to rewind the tape. Tape will move from the right reel to the left reel at high speed.
- **Fast forward button (▶▶)**

Press to rapidly advance the tape. Tape will move from the left reel to the right reel at high speed.
- **Reverse play button (◀)**

Press to play the tape in the reverse direction (side B).
- **Forward play button (▶)**

Press to play the tape in the forward direction (side A).

⑫ NORMAL/HIGH DUBBING buttons
When the NORMAL DUBBING button is pressed, the NOR DUBBING SPEED indicator lights and dubbing from A deck to B deck starts.
When the HIGH DUBBING button is pressed, the HIGH DUBBING SPEED indicator lights and high-speed dubbing starts.

⑬ REC/ARM button and indicator
Press this button to start recording. The indicator lights. The recording mode can only be entered from the stop mode.

⑭ REC PAUSE button and indicator
When this button is pressed during recording, the recording stops temporarily. The indicator lights. To resume recording, press the REC/ARM button.

⑮ DOLBY NR indicators
Indicate the selected Dolby NR system.

⑯ DOLBY NR switches
Used to play back a tape recorded with Dolby B or C NR or to record a tape with Dolby B or C NR. Use the left switch to activate the Dolby NR and the right switch to select Dolby B or C NR. In dubbing, high-speed dubbing or manual dubbing mode, the Dolby NR system is not activated regardless of the DOLBY NR switches setting.

⑰ MIC jack
Plug your low impedance microphone into this jack. Use the REC LEVEL controls to adjust proper recording levels.

Note:
Recording through the LINE IN cables is not possible when microphone is plugged into the MIC jack. Disconnect the microphone before recording from LINE sources.

⑱ PHONES jack
Plug stereo headphones into this jack to monitor recordings or tape playback.

⑲ SYNCHRO OPERATION terminal
Connect this terminal to the synchro terminal of the turntable KD-74F/KD-64F with the synchro cord for synchro operation.

⑳ REC/LINE IN jacks
Connect to the Tape Rec jacks of your amplifier using the audio cables (supplied).

㉑ PLAY/LINE OUT jacks
Connect to the Tape Play jacks of your amplifier using the audio cables (supplied).

㉒ Power cord
Plug in to a convenient AC outlet.

System connections

Connection by audio cables

Two pairs of red and white (or black) audio cables with standard phono plugs attached (i.e. PLAY/LINE OUT cables and REC /LINE IN cables) are provided with your KX-94W. The colors are to identify the right and left stereo channels; red indicates the right channel and white (or black) the left channel.
Use of these cables is recommended for optimum performance in terms of noise and frequency response.
To protect your speakers, turn off all power before making any system connections.
Make connections as follows:

1. Connect the left and right PLAY/LINE OUT jacks to the Tape Play jacks on your amplifier.
2. Connect the REC/LINE IN jacks to the Tape Rec (record) jacks on your amplifier.

SYNCHRO OPERATION terminal

The SYNCHRO OPERATION terminal is used when the unit is combined with KA-94, etc. (amplifier) and KD-74F/KD-64F (turntable).
First, turn off the power switch of the amplifier. Then, make connection between the SYNCHRO OPERATION terminals of the turntable and this unit.

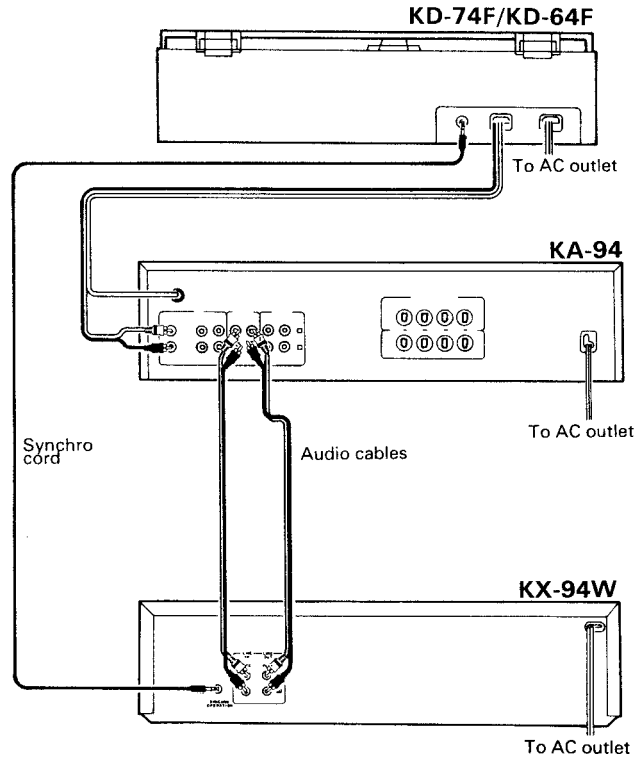

Fig. 2

Installation notes

- Install the unit on a flat, vibration-free rigid table.
- Do not place the unit near a heat producing equipment such as a radiator. Avoid direct sunlight.
- The unit may not function properly if used at extremely low, or freezing temperatures. The ideal ambient temperature is above +5°C (41°F).
- Do not store or use the unit in a dusty location or in a moist atmosphere. Select a location where air is well ventilated.
- Keep the unit away from a source of magnetic fields such as TV sets, speaker systems, radios, motorized toys or magnetized objects.
- Operate the unit on rated power supply voltage (±5%). Irregular power voltage will result in incorrect operation.

* Noise reduction system manufactured under license from Dolby laboratories Licensing Corporation.
DOLBY and the double-D symbol are trade marks of Dolby laboratories licensing Corporation.

Tape playback

1. Set the TIMER stand-by switch to OFF.
2. Set the POWER switch to ON.
3. Press the eject section (⏏) to open the cassette compartment and load a cassette.
4. Select Dolby B or C NR with the DOLBY NR switches to play back a tape recorded with Dolby NR.
5. Press the forward play (▶) or reverse play (◀) button to play back the desired side.
6. Adjust the sound level with the volume control of the amplifier.

Forward DPSS selection (A deck only)

When the tune you want to listen to is before or after the current tune with the tape running, just pressing the fast forward (▶▶) or fast reverse (◀◀) button several times selects the desired tune.

1. When the desired tune is before the current tune, press the fast reverse button (◀◀). When the fast reverse button (◀◀) is pressed once, the tape is rewound to the beginning of the current tune. When the desired tune is the fourth one before the current tune, press the fast reverse button (◀◀) 5 times.
2. To select a tune after the current tune, press the fast forward button (▶▶). The number of tunes that will be skipped will equal the number of times the button is pressed.
   When the fast forward button (▶▶) is pressed once, the tape is rapidly advanced to the beginning of the next tune. When the desired tune is the fourth one after the current tune, press the fast forward button (▶▶) 4 times.

Reverse DPSS selection (A deck only)

When the tune you want to listen to is before or after the current tune with the tape running, in the reverse direction, just pressing the fast forward (▶▶) or fast reverse (◀◀) or fast reverse (◀◀) button several times selects the desired tune.

1. When the desired tune is before the current tune, press the fast forward button (▶▶). When the fast forward button (▶▶) is pressed once, the tape is rewound to the beginning of the current tune. When the desired tune is the fourth one before the current tune, press the fast forward button (▶▶) 5 times.
2. To select a tune after the current tune, press the fast reverse button (◀◀). The number of tunes that will be skipped will equal the number of times the button is pressed. When the fast reverse button (◀◀) is pressed once, the tape is rapidly advanced to the beginning of the next tune. When the desired tune is the fourth one after the current tune, press the fast reverse button (◀◀) 4 times.

Forward DPSS selection (⇨)

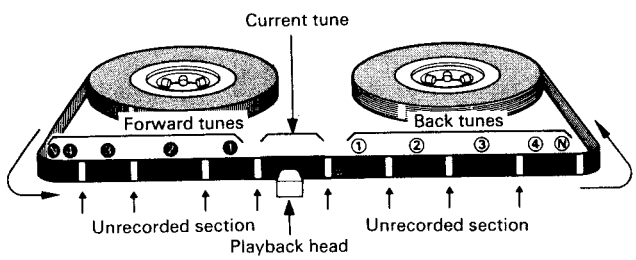

Fig. 5

Reverse DPSS selection (⇦)

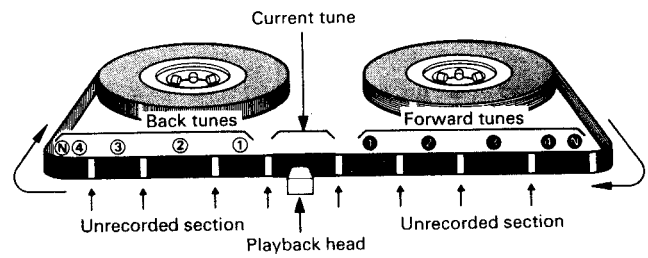

Fig. 6

Note:
The DPSS selection will be carried out on both sides with the REVERSE MODE switch set to the reverse mode (⇉) or to endless mode (⇄).

Index scan (A deck only)

1. Press the INDEX SCAN button. The tape is rapidly advanced while the beginning of each tune is played back for about 10 seconds.
2. When the desired tune is found, press the forward play (▶) or reverse play (◀) button according to the direction of tape travel.
3. To stop index scan, press the stop button (■).

Note:
1. The direction of the index scan is indicated by the reverse/forward indicators. To change the direction of index scan, press the forward play (▶) or reverse play (◀) button, then press the INDEX SCAN button.
2. When the REVERSE MODE switch is set to the reverse mode (⇉) or endless mode (⇄), index scan of both sides is carried out, however the operation automatically changes from side B to side A.

Relay play

1. Load the cassettes in both A and B decks.
2. Set the REVERSE MODE switch to reverse mode (⇉).
3. Press the forward play button (▶) of A deck or B deck.

When both sides are played back and the tape reaches its end, the other deck enters both-side playback mode.

Note:
When the forward play button (▶) or reverse play button (◀) is pressed with tapes loaded in both A and B decks and with the REVERSE MODE switch set to reverse mode (⇉), the unit is automatically set to relay playback mode.
To play back one deck only, do not load a tape in the other deck.

Tape recording (B deck only)

Recording level

The recording level is strongly related to sound quality, distortion, S/N ratio, frequency response, etc. When it is very high, S/N ratio is improved but distortion and frequency response are degraded. When it is too low, the opposite results. The best recording levels can be determined by referring to the PEAK LEVEL METERs. It is easy to record a disc or FM broadcast because their sound level is limited to a certain extent. However, it is difficult to set the recording level when recording live sounds or when recording from an open reel tape on which live sound is recorded because the sound level varies within a very wide range.

Note:

1. The optimum recording level varies according to the sound source and the type of tape. Find out the optimum recording level by recording and playing several times.
2. PEAK LEVEL METER readings during playback may differ from those observed during recording. This is related to tape sensitivity and is no problem.

Recording

1. Set the TIMER stand-by switch to OFF.
2. Set the POWER switch to ON.
3. Press the eject section (⏏) to open the cassette compartment and load a blank cassette.
4. Select Dolby NR with DOLBY NR switch.
5. Set the REVERSE MODE switch to normal position (⇄) except when recording on both sides.
6. Press the REC/ARM button and REC PAUSE button simultaneously.
7. Adjust the recording level.
8. Press the REC/ARM button to start recording.

How to make a blank section

To obtain the best performance from DPSS, blank sections are essential. Leave blank sections as follows:

1. Press REC/ARM button twice. A blank section of about 5 seconds is made and the unit enters the rec pause mode. During recording from the turntable, the unit may not automatically enter auto rec mute mode. At this time, press the REC/ARM button, then press the same button again slowly.
2. To make a blank section of more than about 5 seconds, keep the REC/ARM button pressed the second time. A blank section equals to the time the button is kept pressed is made. When the REC/ARM button is released, the unit enters the rec pause mode.
3. To make a blank section of less than about 5 seconds, press the REC/ARM button twice and press the REC/ARM button again within about 5 seconds. The unit enters the recording mode. When the REC PAUSE button is pressed after the REC/ARM button has been pressed twice, the unit enters the rec pause mode.

Repeat recording

Continuous recording from side A to side B is possible.

1. Set the REVERSE MODE switch to the reverse mode (⇉) or endless mode (↻).
2. If the forward indicator is not lit, press the forward play button (▶) to change the tape running direction and press the stop button (■) immediately.
3. Press the REC/ARM button to start recording. When the tape reaches the end of side A, the recording is automatically continued on side B.

Note:

1. Continuous recording from side B to side A is not possible.
2. When continuous recording is not carried out, always set the REVERSE MODE switch to the normal mode (⇄). Failure to do so will sometimes erase a valuable recording on side B.

Dubbing

1. When the NORMAL DUBBING button is pressed, dubbing from A to B deck starts.
2. When the NORMAL DUBBING button is pressed during dubbing, dubbing is automatically muted and the unit enters rec pause mode, leaving about 5-second blank section on the tape.
3. When an A deck operation button is pressed during dubbing, A deck enters the mode of the pressed button, and B deck stops dubbing temporarily, leaving about 5-second blank section.
   To restart dubbing, press the NORMAL DUBBING button.
4. When a B deck operation button (fast forward (▶▶), fast reverse (◀◀) or stop (■) button) is pressed during dubbing, the dubbing mode is released, B deck enters the mode of the pressed button and A deck stops.
5. During dubbing, the NOR dubbing indicator lights. When the NORMAL DUBBING button is pressed during dubbing, the REC PAUSE indicator flashes rapidly. When the unit enters rec pause mode, the indicator flashes slowly.

High-speed dubbing

To make the dubbing speed increased, press the HIGH DUBBING button.

Note:

When the unit is used with the amplifier, mode switching of the amplifier during dubbing makes it impossible to monitor the unit dubbing.
Dolby NR system is not activated during dubbing regardless of the DOLBY NR switches setting.

Synchro operation with KD-74F/KD-64F

1. Connect the unit to the KD-74F/KD-64F with the synchro cord supplied with KD-74F/KD-64F.
2. Turn the unit ON and load a cassette, checking the unit in stop mode.
3. Operate the KD-74F/KD-64F to play the record and press the DUBBING button. The unit is automatically set to record mode.
4. When the KD-74F/KD-64F is set to pause mode during play, the unit enters rec mute mode, then pause mode. When the KD-74F/KD-64F is set to play mode again, recording starts automatically.
5. When the synchro operation is completed, press the stop button (■).

Note:

For synchro operation, both the synchro and audio cords should be connected. Connect the audio cord of the KD-74F/KD-64F to the PHONO jacks of the amplifier (KA-94, etc.) and the TAPE REC jacks of the amplifier to the recording input jacks of this unit.

Timer standby operation (B deck only)

Unattended recording

1. Connect the power cords to the components as shown in Fig. 7 and set the timer so that power is supplied to each component. (Timer setting procedures vary with the type of timer used. Follow the instructions of the timer's manual.)
2. Turn on the power switches of the components to be used for recording.
3. Select the recording mode with the REVERSE MODE switch.
4. Set the TIMER standby switch of the cassette deck to REC.
5. Tune to the station desired and set the record level.
6. Set the volume control of the amplifier to its minimum setting.
7. Set the timer to the required time referring to the timer's instruction manual so that the power will be switched ON at the preset time.
8. Power to the components will be switched ON at the preset time and recording will start.
9. Recording stops when the tape end is reached.

Note:

To ensure that the automatic shut off switch operates before the power is shut off, set the timer so that it operates for a little longer than the playing time of the tape.

Timer-controlled playback

1. Connect the timer as described for "Unattended recording".
2. Set the timer so that power is supplied to each component.
3. Turn on the power switches of the components used for playback.
4. Select the playback mode with the REVERSE MODE switch.
5. Load a recorded tape and set each switch referring to "Playback procedure".
6. Adjust the volume control of the amplifier.
7. Rewind the tape to the start.
8. Set the timer to the required time.
9. Set the TIMER standby switch of the cassette deck to PLAY.
10. The tape will automatically start playback at the preset time.

Note:

Be sure to note that the unattended playback automatically starts in the forward direction and the unattended recording starts in the direction indicated by the reverse/forward indicator.

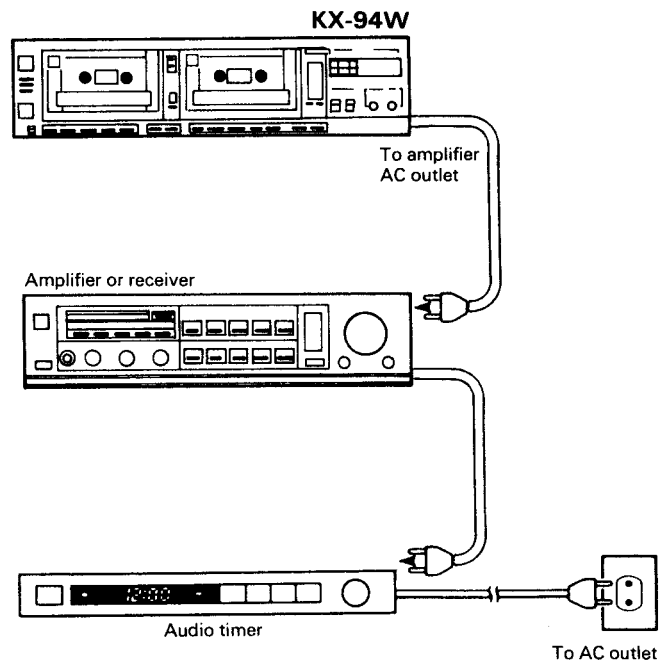

Fig. 7

Maintenance

As the tape rubs against the heads during recording and playback, oxide debris from the tape accumulates on the heads, guides, and pinch roller. To maintain the optimum recording and playback performance, periodically clean the entire tape path, including the heads (about every 10 hours of use).

Cleaning the heads section

1. Press the eject section ( ) to open the cassette holder.
2. Clean the heads, pinch rollers and capstans with a cotton swab slightly dampened with cleaning solvent (or denatured alcohol).

Note:

The heads and guides in the tape path are precisely adjusted. Do not exert excessive pressure on any parts while cleaning.

Specifications

Type	Auto reverse double cassette deck
Track System	4-track, 2-channel stereo/mono, recording/playback
Recording System	AC bias system (Bias frequency: 85 kHz)
Erasing System	AC system
Tape Speed	4.76 cm/sec (1-7/8 ips)
Heads	Hard permalloy playback and record/Double gap ferrite erasing head × 1 Hard permalloy playback head × 1
Motor	Electronically-controlled DC motor × 2 (for capstan) DC motor × 2 (for reel)
Fast Winding Time	Approx. 95 seconds with C-60 tape
Frequency Response:	
Normal Tape	20 Hz to 15,000 Hz (30 Hz to 14,000 Hz, ± 3 dB)
CrO_2 Tape	20 Hz to 16,000 Hz (30 Hz to 15,000 Hz, ± 3 dB)
Metal Tape	20 Hz to 18,000 Hz (30 Hz to 16,000 Hz, ± 3 dB)
Signal-to Noise Ratio:	
Dolby C Type NR ON	73 dB (Metal tape)
Dolby B Type NR ON	63 dB (Metal tape)
Dolby NR OFF	56 dB (Metal tape)
Harmonic Distortion	0.5% (at 1 kHz, 0 VU with metal tape)
Wow and Flutter	0.06% (W.R.M.S), ± 0.16% (DIN)
Input sensitivity/Impedance:	
LINE × 2	70 mV/47 kohms
MIC × 1	0.5 mV/4 kohms
Output Level/Load Impedance:	
LINE × 2	360 mV/2.5 kohms
Headphone × 1	0.1 mW/8 ohms
Power Consumption	24W
Power Requirements	AC 120V, 60 Hz: U.S.A. and Canada models AC 240V, 50 Hz: UK and Australia models AC 220V, 50 Hz: European models AC 120V/220 – 240V (Switchable), 50/60 Hz: Other countries
Dimensions	W: 420 mm (16-17/32") H: 115 mm (4-17/32") D: 270 mm (10-5/8")
Weight	3.7 kg (8.1 lb)
Supplied Accessories	Audio connection cords × 2
Reference Tapes	Normal: KENWOOD ND/ND-x60, TDK AD/AD-x60 CrO_2: KENWOOD CD-60, TDK SA-60 Metal: KENWOOD MD-60, TDK MA-R-60

Note:

We follow a policy of continous advancements in development.
For this reason specifications may be changed without notice.

KENWOOD